Political Risk, Institutions and Foreign Direct Investment: How Do They Relate in Various European Countries?

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Abstract:
This paper examines theoretically and empirically the extent to which the decision by foreign firms to invest in a group of countries is influenced by economic factors, as opposed to political risk and institutional performance. We consider the importance of these factors as drivers of foreign direct investment (FDI) for 32 European countries (subsequently divided into three pooled clusters) by means of

panel regression techniques in two specifications over the 1995-2008 period. Our results suggest that risk and institutional factors considered in both static and dynamic perspectives significantly influence the behaviour of investors. Policies and institutions that vary widely between countries modify their decision-making, so that the purely economic factors have different statistical significance and impacts on the intensity of FDI, as was revealed by clustering countries into three groups according to levels of economic maturity. Additionally, not all factors of risk have an identical impact on FDI decisions in particular groups of countries. However, we find that as measures of political risk, monetary discipline, low regulation, effective government and good education prove to be highly significant for most country groupings. All of these measures reduce political risk and positively affect the level of FDI.

Keywords: FDI; Political risk; Economic institutions; Panel regression; European Union.

JEL: F2; D81; C23

Acknowledgements:
The authors are grateful for the financial support of the Grant Agency of the Czech Republic no. P402/12/0982 and for seed funding from the University of Limerick, which were used for this study.

Highlights:

- We compare 16 factors influencing FDI entry into three groups of countries.
- Institutional and risk factors are important complements to economic factors.
- The estimation is by static and dynamic specification of pooled panel data.
- There is a high difference between static and dynamic decision-making of investors.
- Importance of institutions rises with the degree of economic immaturity of recipients.

1. INTRODUCTION

Uncertainty and risk are inherent to economic environments, particularly those characterised by high capital mobility, world-wide financial shakeouts and the restructuring of international ties; (as in the case of the current crisis). Contemporary economics stresses the importance of institutions, as the "rules of the game" in a society guiding and reducing uncertainty and transaction costs in human interaction (Stiglitz, 1998). The real performance of economic institutions differs widely among countries; some may even become impediments to businesses. By adopting a cross-country comparative approach, the current paper empirically tests the extent to which decisions to invest in a given group of countries (as opposed to another group) are influenced by actual or perceived risk factors associated with investment *ceteris paribus*.

This paper examines the risk associated with socio-political institutions and governance, which for the purpose of the current paper will be called "political risk".[1] The key issue is to test how economic and political risk co-act in affecting foreign direct investment (FDI) inflows into a particular set of host countries. In the abundant literature regarding determinants of FDI, only a few studies include political risk as a relevant variable. Discussion of the relationship between risk and FDI tends to be embedded in the context of traditional FDI-macroeconomic drivers such as labour costs, factor endowments or level of infrastructure; in the present international context, these seem to be necessary but insufficient determining factors. Institutions are not linearly dependent complements to economic factors. Akerlof and Shiller (2009) doubt that real decision-making can be limited to economic rationality as approximated by mainstream economics. For example, there are psychological factors ("animal spirits"), whose expectations reflect the institutional setup in a given society: its values, path-dependency or local conflicts of interest. In this regard, institutions can be dominant drivers of long-term development.

Another qualification should also be considered: the recent boom in meta-analysis of economic research which reveals that economic theories are too often falsified by empirical data, or that the spectrum of empirical conclusions is so varied and conditional that their universal validity shrinks to particular cases. Such are the results of research on FDI spillovers by Wooster and Diebel (2010) and particularly by a series of recent papers by Havranek and Irsova (2010, 2011, 2012a, 2012b), which imply that decision-making of investors is too

[1] Political risk can be associated with exposure to losses due to man-made institutional constraints that discriminate among economic agents, striking a bias in the allocation of resources. Thus it is a factor that acts beyond traditional economics as an interference of political institutions (which may be informal or illicit) in market-based economies. Our paper tests how non-market factors related to policies, social governance, property rights, public goods and collective action modify decision-making of investors in various groups of countries.

complex to be captured by present economic theories. In this paper, we test the hypothesis that patterns of decision-making about investments depend to a large extent on political factors embodied in institutions; institutions, which were contrived locally and at widely varying levels of economic performance development.

We consider 32 European countries, divided into three groups[2] as follows: Advanced Europe, Accession countries (the first wave) and EU Candidate countries. By employing a cross-comparative approach, we seek to examine differences in the performance of conventional macro-economic factors as well as political/institutional risk factors affecting FDI decisions. Such a comprehensive discussion has been largely ignored in the context of cross-sectionally compared countries.

We focus primarily on behavioural patterns related to *a priori* perceptions regarding the relationship of risk and FDI, and on the revealed empirical evidence emerging from our estimates. As our results suggest, not all definitions of risk can be negatively associated with the FDI decision. Interestingly, this paper highlights both differences and similarities among countries that do not share the same history, culture and level of economic development (EBRD, 1994). Moreover, it reveals that non-economic factors are important but not easily predictable contributors to economic decision-making.

The remainder of the paper is structured as follows: Section 2 briefly discusses the determinants of FDI. Section 3 explores the potential connection that may exist between political risk and FDI. Sections 4 and 5 focus on methodology and econometric modelling; and on results respectively. Section 6 concludes.

2. WHAT DETERMINES THE INFLOW OF FDI?

The underlying reason for FDI is the entrepreneurial expectation of a higher yield of capital conceived as opportunity cost. However, this is directly unobservable soft data which by its very nature makes economic analysis very difficult. Thus there have been numerous attempts to find theoretical causes that correlate with entrepreneurial decisions. Beginning with Caves (1982), economists have concerned themselves with underlying reasons for the emergence of multinational corporations. Following the Ownership, Locational and Internationalization (OLI) paradigm developed by Dunning (1981), a plethora of literature attempts to model the empirically observable determinants of FDI. The vast majority of

[2] Our groups are based on institutional similarities more than geography. Due to data limitations, we did not work with the EU-15 group, but created a group called Advanced Europe: 15 countries akin to the European Economic Area including Norway and Switzerland. The group of central and eastern European countries (CEECs) was split into nine Accession_1 countries (Malta had to be eliminated) and eight EU Candidate countries.

existing literature examines the influence of general economic phenomena, in spite of the inclusion of 'political stability' in the OLI framework. This is primarily due to the fact that economic phenomena are easily quantifiable (Habib and Zurawicki, 2002). Since Dunning, other researchers have developed theoretical models to explain decisions regarding FDI. Such models have been broadly classified as 'vertical firms', 'horizontal firms' and 'knowledge-capital models' (Markusen and Maskus, 1999a, 1999b).

Much existing literature attributes FDI inflows to the following key factors:

Labour costs – Many studies agree that abundant and cheap labour (relative to the investor country and to alternative locations) attracts FDI to a particular host economy. Using a panel dataset of bilateral flows of FDI from Western countries to CEECs, Bevan and Estrin (2004) find the coefficient on labour costs to be negative and significant. They report greater FDI flows to locations with relatively lower unit labour costs, independent of distance or host country size. This is compatible with the Heckscher-Ohlin paradigm of comparative advantage: specialization in labour-intensive production is intensified in countries with higher relative labour per capital endowments, which implies lower wages and higher capital yield.

On the other hand, authors such as Lipsey (1999) indicated that labour costs might have a positive or indeed no significant influence. Thus there is no consensus on *labour-related* coefficients, for these depend on type of investment, factor mix endowments, and level of development of the host country. The motivation of foreign investors depends on productivity levels of all factors rather than on absolute labour cost levels alone (Holland *et al*. 2000). Rather than cheap and abundant labour, availability of innovation capability and of a highly skilled labour force could make economies attractive to FDI. For example, despite being a high cost economy, Sweden has attracted unprecedented levels of inward investment since joining the EU in 1995. According to Holland *et al*. (2000), factor costs play a secondary role to market access in terms of explaining inward FDI.

Size of the market and potential of demand growth – As argued by Kobrin (1976), FDI is positively influenced by size (in terms of population or GDP) of the host economy market. Modern trade theories stress the importance of increasing returns to scale, which can be gained by capture of large external markets even at the cost of hiring expensive local labour. Bevan and Estrin (2004) find market size to be a very important determinant of FDI flows to CEECs Wells and Wint (2000) argue that GDP per capita, independent of market size, is a significant complementary explanatory variable of FDI. In summary, market size and growth potential are the major determinants of FDI in the CEECs (EBRD, 1994; Holland *et al*., 2000).

Tax Issues and other Incentives – Although a macro-economic factor with a clear political underpinning, the 'package' of fiscal incentives on offer is also an important determinant of FDI. The package may include factors such as low level of corporation tax and

investment subsidies. In the case of Ireland, several commentators (e.g. Görg and Ruane, 1999) have singled out low levels of corporate tax as the principal reason why Ireland has been successful in attracting FDI. Other support structures, which attract FDI, include good 'after-care' service by industrial development agencies and good local physical infrastructure. For the CEECs, investment incentives have not had a significant impact on decisions to invest in the early stages of transition (Holland *et al.*, 2000). However, this might be reversed in later stages.

Openness – According to Jun and Singh (1996), export orientation of the host economy (as a measure of openness) can stimulate FDI. Habib and Zurawicki (2002) argue that international orientation is a good indicator of competitiveness and an important determinant with respect to FDI.

Other less mentioned determinants – These include geographical distance (Bevan and Estrin, 2004); strategic links and networking effects (Nohuria and Garcia-Pont 1991); and 'diaspora' effects, in particular duration and strength of diplomatic, cultural and economic ties between the home and potential host country. Greater ties increase understanding between home and host country, which is conducive to FDI (Slaughter, 2003; Barry, 2004). Other factors identified in various studies have included economies of scale, management skills and innovative product technologies (Asiedu, 2002).

3. POLITICAL RISK AND FDI

The literature since the late 1990s focuses increasingly on the notion of political risk. In particular, corruption as an indicator of political risk has gained prominence due to increased interaction (driven by globalization) between less corrupt and more corrupt countries. With the rising power of local bureaucracy and increasing opacity in public administration, the risk of state capture and political interventions can modify competition on already not-so-free markets. Increasing attention to political risks in socio-economic studies is associated with the revival of neo-institutional economics, brought to the fore by problems such as post-communist transition, globalization and world financial crises.

We consider four studies essential to the methodology of this research. Alfaro *et al*. (2008, 2009) demonstrate why so many studies of FDI flows suffer from incomplete specification, omitting mainly the variables of human capital, market imperfections and institutional failure. Using data for 81 countries for 1979-2000 Alfaro *et al.* (2008) explain why poor countries keep constraining their access to capital. Aside from considering differences in economic fundamentals and capital market efficiency, poor countries fail mainly in the area of institutional quality relative to advanced countries. The paper concludes with a

challenge: 'Recent studies emphasize the role of institutions for achieving higher levels of income, but remain silent on the specific mechanisms' (p. 22).

Secondly, Holland *et al.* (2000) reviewed available evidence on the relationship between FDI and factors affecting inflows. It is worth noting that political stability was only one of many contributory factors. Their paper provides the following insights: first, political stability may influence the distribution of investment across countries; and second, location of investments may also be influenced by risk perceptions. Relying on survey and econometric evidence, Holland *et al*. report that macroeconomic and political stabilization policies have played an important role in the location of FDI. Their analysis considers a number of empirical works that relate to the CEECs. We extend the analysis by considering transition economies of two groups, comparing them with advanced countries over the time span 1995-2008 by applying more complex techniques of estimation.

As a third paper, Guerin and Manzocchi (2009) combine economic factors of country size, per capita income and privatization proceeds with institutional variables proxying political regime; this leads to a wide spectrum of inferences, including their conclusion about the two-channelled effect of democracy on FDI. Last but not least, we had to reconsider our general methodological approach following the quite recent paper by Jellema and Roland (2011) that deals with comprehensive questions how political, legal and cultural institutions could be related to growth. Their study draws attention to the fact that because this type of empirical testing lacks sufficient theoretical underpinning, it has problems with the choice of robust explanatory variables and gets easily entangled with multicollinearity and cointegration. Therefore we have limited our choice of institutional variables to fast-moving factors associated with political risk, which are also subject to economic policy-making.

The current paper can be considered a follow-up to the above papers. First, we extend their scope by activating an interaction between soft institutional/risk factors and economic factors, assessing their balanced impacts. Second, we compare the importance of these factors in three groups of countries that differ as to level of economic development; and third, we apply two methods of panel estimation, each possessing a specific economic interpretation related to time and location. We consider the latter to be our most innovative contribution to quantitative analyses in the world context.

In searching for a difinition of political risk, it was originally defined as adverse consequences arising from political events (Kobrin, 1979). Howell and Chaddick (1994) defined later political risk as '…the possibility that political decisions, events or conditions in a country, including those that might be referred to as social, will affect the business environment such that investors will lose money or have a reduced profit margin' (p.71). In the 1990s, emerging discourse on the accountability of governments gave rise to a different

approach to defining political risk. Drabek and Payne (1999) use a 'non-transparency' variable; a composite indicator of corruption, unstable economic policies, weak property rights protection, and defective governance. In the same vein, Wei (2000) sees corruption as an important dimension of political risk, defining it as '…poor public governance rather than as bureaucratic corruption narrowly defined' (p. 307). We could add such factors as corruption in the bureaucracy and the judicial system, red tape, and gaps in the rule of law.

There are nearly as many definitions of political risk as there are studies on the issue. In his model of FDI determinants in the CEECs, Altomonte (2000) aims to reconcile various definitions used in the literature. With reference to the political risk attached to transient institutions in the CEECs, he uses two variables to measure: (1) the perceived quality of the local institutional framework (a 'subjective index of transition'); and (2) the real extent of the legislative framework (an 'objective index'). He finds the first variable to be highly significant, whereas the second variable is not. Nevertheless, all studies concur that political risk is seen to affect the value of FDI via changes in future cash flow and investors' expected return.

Corruption of bureaucratic mechanisms in a host country constitutes a special category of political risk. The classical theoretical work on corruption resides with Nye (1967) and Rose-Ackerman (1975). Shleifer and Vishny (1993) distinguished between organised/efficient corruption and disorganised/inefficient corruption. The former implies that payers can decrease transaction costs by means of a relatively well-defined bribe; with the latter, outcomes are uncertain even after a well-defined bribe. In defining corruption, the World Bank highlights the abuse of public power for private benefit (Tanzi, 1998). It can reasonably be stated that theoretical arguments against corruption have both ethical and economic aspects, such as inefficiencies of fettered markets or behaviour of agents trapped in the prisoner's dilemma. Egger and Winner (2006) state that, 'From a theoretical perspective, corruption may act as either a grabbing hand or a helping hand for inward FDI…' (p. 459).

Having discussed relevant dimensions of political risk, we examine twelve aspects of political/institutional risk as determinants of FDI in the environment of developed European countries, CEECs, and other transition economies. We look at behavioural differences in markets for FDI between countries, and institutional factors that explain such differences.

Empirically testing political risk as an explanatory variable of FDI is not an easy task. Evidence can be broadly divided into survey versus econometric estimation. In the literature in general, results of econometric studies are mixed. Harms (2002) aptly sums up the situation: 'While survey studies regularly show that political risk plays an important role in managers' decisions whether to invest in a particular country, the econometric evidence on political risk and investment flows is much less conclusive' (p. 377).

Busse and Hefeker (2007) empirically estimate the links between a variety of components of political risk, institutional quality and FDI flows, finding a great many of them significant. Drabek and Payne (1999) report a negative impact of non-transparency on FDI. Looking at the case of 35 developed and emerging countries in the year 2000, Hooper and Kim (2007) used an 'opacity index' and found that higher opacity deters capital inflows, in particular FDI. Breuss, Egger and Pfaffermayr (2010) confirmed by using logistic regressions, that entry to the EU and access to structural and cohesion funds increased the attractiveness of new EU members as FDI recipients; this can be interpreted as an institutional arrangement that decreases the risk in these countries.

On the other hand, using panel data for 15 Latin American economies (1980-1996), Biglaiser and De Rouen (2006) found that the only covariates strongly correlated with the rate of FDI in a given year were the risk of expropriation, domestic financial and trade reform, high government consumption in host countries, and reinvestment by MNCs. Wheeler and Mody (1992) fail to find a significant correlation between size of FDI and the host country's composite risk measure, which includes perception of corruption as one dimension. In a pooled analysis of developing countries over the period 1982-1995, Li and Resnick (2003) fail to find any statistically significant effect of political stability improvements on FDI inflows, with the exception of regime durability. Globerman and Shapiro (2003), in a two-stage analysis of US FDI flows to 43 countries (1994-1997), find that an index of political instability and violence (comprising armed conflict, social unrest and terrorist threats) does not influence the probability of a country's receiving FDI inflow, but does reduce the *amount* of FDI inflow.

Some conflicting results on the relationship between political risk and FDI can be resolved by considering type of FDI (or entry mode) chosen by the firm, this is rarely discussed in the literature. In his study of Swedish investors entering new markets, Zejan (1980) claimed that increased risk in the 1970s led to a positive influence on the propensity to choose takeovers (as a low risk strategy) rather than green field investment as an entry mode. Therefore, information on ownership and control is essential in the exploration of political risk as a factor influencing FDI (Andreosso-O'Callaghan and Bassino, 2006). The results of the econometric studies, although mixed, point towards a positive impact of what could be termed 'a sound political framework' on inward FDI, irrespective of the definition of risk used.

Survey studies (via interviews or questionnaires) indicate that perceived political risk and stability are important considerations in determining FDI (Bass, McGregor and Walters 1997). However, in a survey of German FDI in the CEECs, Wei, Andreosso-O'Callaghan and von Wuntsch (2007) conclude that political instability ranks fourth among determinants of

FDI, and is very much overshadowed by market access and tax considerations. The importance of the latter was also stressed by Devereux, Griffith and Klemm (2002).

The studies mentioned above lead to three major conclusions. First, political risk has not been systematically included in studies on determinants of FDI. Second, where it has been included, results on its impact are mixed, absent to a wider institutional context for such findings. Third, the method of analysis is not neutral to results: the choice of analytical technique combined with an indiscriminate approach to cross-section and time-series specifications can result in incompatible economic conclusions. Regarding transition countries in Europe, the evidence is clearer. Because CEECs have experienced drastic change in political regimes since the fall of the Berlin wall, most studies on FDI determinants in CEECs include a proxy for the political risk variable. All survey studies on these economies convey similar results: political risk is a hindrance to FDI. In particular, using EBRD transition indicators, Lankes and Venables (1997) argue that risk increases the likelihood of FDI projects' being abandoned.

These results have been substantiated by the econometric work of Holland and Pain (1998); Bevan and Estrin (2004); Frankel, Funke and Stadtmann (2004). In the latter study, risk has political as well as economic aspects, and is found to significantly affect FDI in the case of CEECs during the time period 1992-2000. Given the current papers' focus on European economies and in particular CEECs, Bevan and Estrin's (2004) insights are particularly relevant. Employing a panel dataset (1994-2000) of bilateral flows of FDI from Western economies to CEECs, they find the primary influences of FDI to be unit labour costs, gravity factors, market size and proximity. They report that announcements about timetables for admission to the EU increase levels of FDI to prospective members and diminish the importance of country risk. Would this imply that the EU accession is bound to wane the importance of risk in these economies – pointing to a sort of institutional convergence?

From the previous analysis, another two important observations can be inferred. First, definitions of political risk have followed a chronological evolution. Earlier studies (through the early 1990s) defined political risk as referring to the occurrence of political events such as abrupt regime change (*coups d'état*), conflict, political and social disruptions. In contrast, more recent studies emphasize highly heterogeneous sovereign national policies and institutions and their varying impacts on attracting FDI. This conceptual shift aligns with deepening globalization, in particular the breakdown of the Soviet Union with its concomitant phenomenon of 'transition economies', as well as the relative success of economic reforms in China and its economic rapprochement with both the USA and the EU. With the decrease of perceived political risk (e.g., seizure of assets by a centralised system) and political uncertainty (with former USSR 'satellite' and neighbouring countries being free to adopt pro-

market principles), the definition of political risk has shifted to embrace 'good governance' issues – a notion that appeared in the 1990s under the influence of neo-institutional economics.

Second, policies and their real implementation in CEECs often interfered with market functions; the intensity of this inference varied in time. Pro-liberal reforms prior to EU accession often received a setback once the umbrella of *acquis communautaire* could be used for reverting to practices of governance found in command economies. This chronological and conceptual shift in institutions, from pro-market to bureaucratic, needs to be taken into account when defining political risk in post-communist countries. It should be incorporated in our time-series.

4. METHODOLOGY AND MODEL VARIABLES EMPLOYED IN THIS STUDY

We use a panel regression technique that allows us to pool together significant clusters of data in a systematic framework so as to analyze the relationship between FDI drivers and FDI flows in countries sharing a certain institutional history. Our approach distinguishes between cross sectional and time series dimensions of the processes reflected in our data. Most of the studies cited in our paper employ a panel data regression to examine the causality relationship between FDI determinants and the observed investment flows in the countries of interest. It is common to estimate such a relationship by models with fixed or random effects. We have also tested the data for autoregressive processes in the variables, which allows us to complement the previous static estimation with a dynamic model of GMM. The usage of instrumental variables improves the consistency of estimators because it is more resistant to endogeneity and co-integration among our explanatory variables.

Without pretending that this kind of analysis could unveil true causal linkages, our aim is to explain the general regularities that could potentially be correlated with FDI annual inflows in groups of selected European countries in the period 1995-2008, i.e. prior the world financial crisis. The FDI data under investigation are expressed in US dollars and were obtained from the UNCTAD online database of 2010. In line with the variables identified in the literature, the traditional macroeconomic determinants of FDI include:

GDP per capita (PPP), as a variable that measures the "wealth" effect that attracts FDI;

Population size, as a measure of market size. *A priori* one would expect that a sufficiently large market size would serve as an attractive factor for investors seeking a higher demand for their products;

Trade openness (as a ratio of trade turnover per GDP), quantifying the potential for enlarging the domestic market by exporting or purchasing inputs abroad;

Telecommunication infrastructure proxy **(**number of telephones per 1000 of population). Countries with a developed telecommunication infrastructure would be more attractive;

Labour cost (as an index of growth in labour compensation, with an index of 100 in base-year 2000) meant as a proxy for employment costs behind the value added. We aim to measure whether higher costs of labour are an impediment to FDI efficiency.

We have extended the former list by considering eleven potential political risk indicators in order to assess how economic factors of FDI are complemented by institutional and political risk factors[3]:

Business (regulation) freedom: the ability to create, operate, and close an enterprise quickly and easily. Burdensome, redundant regulatory rules are seen as the most harmful barriers to business efficiency.

Trade freedom: a composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services.

Monetary freedom: combines a measure of price stability with an assessment of price controls. Both inflation and price controls distort market activity.

Freedom from government: a score based on the level of all government expenditures – including consumption and transfers – and state-owned enterprises. Ideally, the state will provide only true public goods, without lavish public expenditure. Hence, countries with heavy government spending are assigned the lowest scores.

Fiscal freedom: a measure of the burden of government from the revenue side. It includes both the tax burden in terms of the top tax rate on income (individual and corporate separately) and the overall amount of tax revenue as portion of GDP.

Property rights: an assessment of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state.

Investment freedom: an assessment of the free flow of capital, especially foreign capital.

Financial freedom: a measure of banking security as well as independence from government control. State ownership of banks and other financial institutions such as insurer and capital markets is an inefficient burden, and political favoritism has no place in a free capital market.

Freedom from corruption: based on quantitative data that assess the perception of corruption in the business environment, including levels of governmental legal, judicial, and administrative corruption.

[3] The first nine indicators are taken from the Heritage Foundation index of economic freedom, thus retaining their names. We have opted to use these instead of World Bank governance indicators because the former demonstrate better coverage for the years 1995-2008 and offer a wider span of indicators that relate to institutional barriers to market performance. To our knowledge, these indices have not yet been used in the context of FDI, risk and policy-making. Our aim was to use institutional/risk variables as policy instruments, in contrast to economic variables that lack this property.

Education index: reflecting the endowments of human capital. Its level is strongly influenced by public administration.

Government effectiveness: considered to be the proxy for the organization of public governance and its positive externalities.

The use of ordinal scale in measurement has become quite common recently in academic studies where researchers seek to quantify qualitative phenomena that differ in ranking (Addison and Baliamoune-Lutz (2006); Wei (2005)). It should be highlighted that in our case these indicators are perception-based and accepting their potential subjective bias is a risk undertaken by the researchers. The available alternatives are scarce and can be summarised as follows: dropping institutional variables means an omission specification bias due to increased endogeneity. Each of our eleven variables represents a score between 1 and 100, for a particular country and for a specific year. The higher the score, the more freedom (or positive performance) a country experiences within a particular category. In line with our previous discussion, it can be argued that each of the risk variables outlined above can be viewed as part of a broad political risk component. We nevertheless treat these different components as stand-alone determining variables in a standard FDI equation, which also includes five macroeconomic variables as explained above. A summary of the explanatory variables used and their data sources are provided in Table 1.

Table 1: The list of macroeconomic, institutional and risk (exogenous) variables

Macroeconomic variables:	**Sources:**
* GDP per capita in PPP [GDP/PC], * Population size [POPUL], * Trade openness [TRADE/GDP], * Telecommunication infrastructure [TELEC], * Labour cost [L-COST]	* The World Bank, external data statistics on GDP, population and trade, 2010; * United Nations, Statistics on labour and earnings, 2010; * IMF, WEO Database, 2010
Institutional and risk variables:	**Sources:**
* Business freedom (regulation) index [REGUL], * Trade freedom (trade barriers) index [TRADE], * Monetary freedom (inflation and price control) index [MONET], * Freedom from government (public spending) index [GOVERN], * Fiscal freedom (taxation) index [FISCAL], * Property rights index [PROP-R], * Investment freedom (capital controls) index [INVEST], * Financial freedom (private banking security) index [FINANC], * Freedom from corruption (perception) index [CORRUPT].	* The Heritage Foundation, Database on the Economic Freedoms, 2010.
* Education Index [EDUC].	* United Nations, Human Development Index, 2010.
* Government Effectiveness [GVT-EFF].	* The World Bank, Kaufmann, Kraay and Mastruzzi, 2009.

After testing the statistical properties of our exogenous variables (e.g. their co-linearity or significance in regressions), we have selectively limited the analysis to a final set of those explanatory variables that were statistically relevant for explaining FDI in a given group. Thus by econometric testing we have arrived at a list of key factors necessary for inclusion, with the objective of arriving at a robust measure of both economic factors of FDI as well as their associated political risk.

The 32 countries used in this study were tested for common properties in four different groups: ALL (a category defined to include all 32 countries), Advanced European-15 (i.e. the 13 economically advanced EU incumbent countries, plus Switzerland and Norway), Accession-9 (i.e. those countries that joined the EU in May 2004, except Malta), and the EU Candidate-8 countries (i.e. the candidates as of 2005, including Bulgaria and Romania). A list of the countries is provided in Table 2 below. The analysis was performed on 14 years of data covering the time span 1995-2008.

Table 2: List of countries used for this study with breakdown into groups

Groups	Countries
Group 1 (ALL)	Advanced Europe-15 + Accession-9 + EU Candidates-8
Group 2 (Advanced Europe-15)	Austria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom
Group 3 (Accession-9)	Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia
Group 4 (EU Candidates-8)	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Romania, Serbia, Turkey

4. ESTIMATION RESULTS

The panel data regressions were estimated as logarithmic data on the four groups of countries identified above. The assignment to groups was undertaken with a view to historical paths related to EU institutional alignment, assuming that members of such groups were subject to some institutional similarities formed by compliance with *acquis communautaire* or the degree of development.

Our first concern before proceeding with regressions was to assess the extent of potential multicollinearity between independent variables. Both the correlation matrices and VIF statistics indicate that there is one common drawback in our data: in all our groups GDP per capita (i.e. level of economic development) is too closely co-integrated with some of the remaining economic variables (such as infrastructure or labour costs) and institutional variables (such as education or corruption), though not in a uniform fashion across groups. The VIF statistics reveal that GDP per capita can be highly significantly "explained" by the remaining variables in all four groups, pointing to endogeneity in explanatory variables generated by implicit causal links between them. It is an interesting finding implying that economic underdevelopment is reflected in institutional underdevelopment (and *vice versa*). The interaction between economics and institutions, as a sort of circular causality is a form of endogeneity of development in the real world.

In light of the above, we had no better option than to drop the GDP per capita from the cross-section specifications of our model, thus offering an increased visibility to other variables (as its allied instruments), which would otherwise be crowded-out from regressions.[4] The initial co-integration in our data was so great that even after dropping GDP

[4] Although dropping a collinear variable that is theoretically autonomous solves the technical data problem, it has its drawbacks: it introduces a specification error into the equation and lowers the explanatory power of our findings. The latter use of instrumental variables is a partial solution to that issue.

per capita, we could presume that this variable was implicitly present by means of its functionally allied "manifest" variables. Alternatively, by keeping GDP per capita in the model we could construct a parallel specification (autonomous for each group), that would be theoretically justified. In cases of time-series specification the option of including the GDP per capita was vindicated by the higher explanatory power of that regression. In order to avoid ambiguity and inflation of results we kept only one specification for each type of estimation.

The next step was the estimation of our four models (for all, advanced, accession and candidate countries) by means of fixed versus random effects. Panel data can be identified as a problem to be solved by either cross-section or time-series analysis; this reflects the problem faced by investors as decision-makers. Financial investors assess the opportunity costs of their investment in various alternative allocations (in this case by country), ranking their odds in each of them in a static (geographic) way related to accumulated past information. The latter points to panel estimation as a *series of cross-section segments*, as depicted in Fig. 1. Each parallel solid line starting from A_1Z_1 up to A_tZ_t represents cross-section observations of FDI by country A through Z in given time T=1, 2, ... t relative to market size proxied by population size. Our model estimates parameter β that quantifies FDI absorption among countries at different sizes of their markets *in a given time*. It is a static description of outcomes of past decisions.

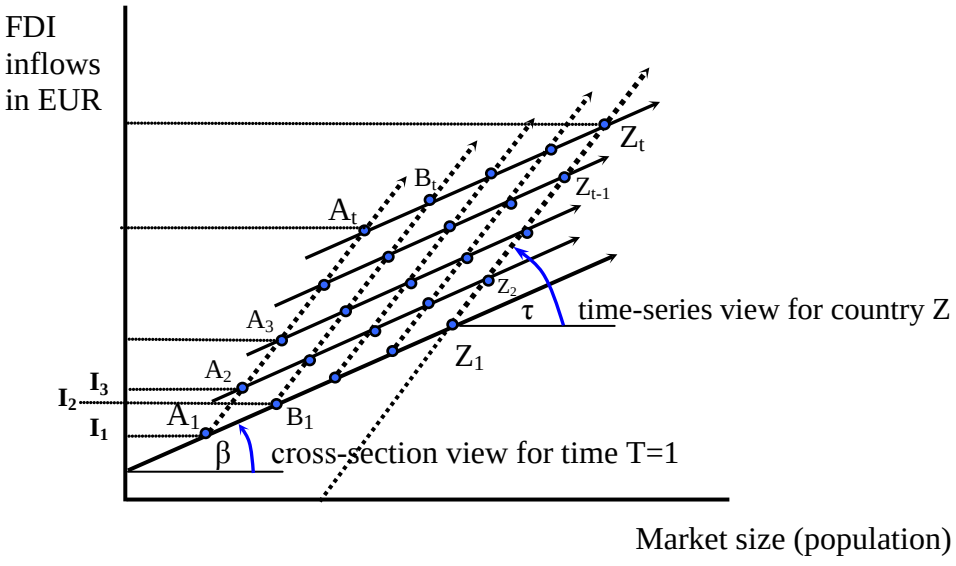

Fig. 1: Estimation of the panel data by cross-section specification versus by time-series specification.

However, every experienced investor would claim that this must be combined with "dynamics", that is, with the evolution over time of the situation in countries, because what ultimately matters are future (expected) yields and the dynamics of market size. The latter

points to a *panel estimation as time-series* and the general dependence of FDI on the evolution of market size in individual countries over time. Under such circumstances, we work with data arranged by dashed lines A_1A_t through Z_1Z_t and estimate parameter τ that characterizes the growth of FDI *as separate markets grow in time*. This is crucial information for the real decision-making process. By using parallel static and dynamic estimation we can reflect the two-stage decision making of investors who first decide where to locate their FDI and then how much to invest.

From a technical point of view, this theoretically well-known complementary dual estimation of panel data[5] offers a unique explanatory insight, even though empirical researchers have seldom considered it explicitly. As we can see, both estimates are necessary because they provide *different complementary information* about the state of FDI flows in given countries. Quite rarely are coefficients β and τ identical, pointing to unchanging proportionality of FDI to market size among countries and in time. For example, if β=0,8 then opening up market B_1 (which is by 100% larger than A_1) will attract FDI in I_2, which is larger by 80% than I_1 in market A_1 (due merely to the size factor). However, if the market size of A_1 expands in the next period by 50% to A_2 then its FDI can be expected to increase to I_3, implying that it reacts at a higher intensity because its coefficient τ = 1,6. The observation that $\beta < \tau$ implies that we, as external observers, *have a dual vision on the impact of market size on FDI*: we can see that investors were responding more intensively (in the observed time period) to the perspective of growing markets than to situations where they considered opportunities by discriminating among countries with different market sizes in a given year. A statistically significant difference in coefficients β and τ signals that *a break occurred in the past trends* in the relationship between related two indicators. In addition, as our estimations will show, pattern of time versus geography-dependent responses differs not only between countries (or the groups of countries) but also in time.

In our estimations we have proceeded gradually, first testing the panel in a cross-section specification by means of both fixed and random effects, and subsequently estimating it in a time-series specification. The choice between fixed and random effects estimators was based on the Hausman specification test. However, the estimators by these methods may not be free from bias caused by potential endogeneity between our indicators and FDI (pointing to

[5] Baltagi (2008) explains the dual nature of panel data in the analysis by two-way in contrast to one-way error component models (pp. 57-63). By pooling our panel separately across countries and over time we could then derive two parallel one-way models based on identical identifications but describing different aspects of investment strategies, i.e. to groups pooled either by trade-offs in space (static cross-section) or by different time trajectories (dynamic time-series).

a hidden loop of reversed causality), or when the correlation of some regressors with error terms would be caused by omitted variables or the existence of measurement errors. All our estimates were cross-checked by estimations with instrumental variables, for which we used the dynamic one-step GMM estimation. The results for the estimation of macroeconomic, institutional and risk drivers of FDI in all 32 countries of our panel are presented in Table 3 (see Appendix 1).[6]

The static cross-section type of estimation with fixed effects (marked as #1a) reveals that three economic indicators are dominant in decisions by investors about the choice of country for their ventures: market size, infrastructure and labour costs. However, risk indicators are no mere fringe factors – they act as a concomitant institutional underpinning of the former (as well as being the policy instruments). The general importance of efficiency of financial intermediation and education is apparent. Surprisingly, high government spending (i.e. a low index of "government freedom"), seems to act as an important attractor of FDI and not as a barrier; this was also the case with high labour costs. In addition, we included in Table 3 an alternative specification marked as #1b where the variable GDP per capita was also included. This required the elimination of its collinear variables of telecommunications, labour costs and some institutional risks. The latter model is simpler, crowding out two of the previously significant institutional variables.

The GMM estimator of a similar model (#2, parallel to #1a), but viewed from an IV perspective, points again to the crucial importance of economic factors. However, its assessment of institutional circumstances indicates that there could be other risk factors to consider (bearing in mind that the coefficients of the GMM estimation can be viewed as elasticities).

The complementary model of decision-makers estimated as a panel succession of time-series of 32 countries (see #3) had to be approached by a GLS regression with random effects. Here we decided to include GDP per capita due to its robustness at the expense of dropping some of its collinear risk factors. The decisions of investors within time evolution seem to concentrate predominantly on the growth of economic factors, complemented by

[6] All our estimators were tested for multicollinearity, which was eliminated in the final specifications. In cases of the presence of heteroscedasticity, White´s corrections for the residual variance were applied. All our alternatively estimated coefficients are comparable – we can treat them akin to elasticities. While working with the GMM, we checked that its instruments did not over-identify the model and guaranteed their exogeneity especially in estimations with low number of countries. We first relied on Sargan and Hansen tests, whose p-values were greater then 5%. We complemented these by two Arellano-Bond tests of AR(1) and AR(2), where the former should indicate values below and the latter above 5%. In the choice of instruments we relied on high differences derived from sufficiently large lags, which our data provided with ease; the number of instruments was not greater than the number of countries.

rising government expenditures. The differences in coefficients of the economic variables highlighted above (compared to cross-section estimation #1a) are not very high. However, there is one crucial difference if compared with #1b: the coefficient for GDP per capita of 0,778 is now lower than 1,472 estimated cross-sectionally. This can be interpreted as a tendency in the observed 14 years towards a FDI bias in favour of rich countries, notwithstanding the catching up of poorer countries. It needs to be borne in mind that cross-country (static or country trade-off) and cross-time (dynamic or FDI growth) considerations of investors are not exclusive; rather, they are parallel complementary decision-making processes.

A parallel IV estimation was run by means of GMM technique; we searched for common patterns of behaviour for 32 countries over time. We found that the dominant variable for FDI dynamics was the market size (proxied by population). This factor crowded out GDP per capita, telecommunication infrastructure and labour costs, which became statistically insignificant. This model's results are the simplest of all our estimations, with the model possessing a rather surprising implication: the institutional situation in destination countries of FDI within Europe does not seem to be crucially important to investors from a dynamic long-run perspective. They considered it relevant only from a momentary (cross-sectional) point of view when their decision-making discriminated among countries on grounds of institutions and political risks. Once such a discrimination as to FDI allocation was made, FDI could grow regardless of institutions and evolve at a more uniform rate among countries.

One of our objectives was to test whether behavioural and institutional conditions for FDI allocation across countries were homogenous and invariant in time. Thus we clustered the data according to EU membership history, which is related to the economic and institutional maturity of countries. Table 4 depicts the estimators characteristic of European advanced countries, the majority of them being EU incumbents. The tests show an essential difference in the revealed decisions of investors in this group of countries.

It is worth noting that the desegregation of the initial set of 32 countries into three subgroups varies the hypotheses tested: the aspect of feasible investment alternatives is constrained by the list of countries in the group. It is assumed that investors have already decided about investing into a particular subgroup of countries (subject to analyses #1 through #4); the problem is to choose the "correct" country from the short-listed ones. Thus we follow the step-wise decision-making of investors who optimize their FDI allocation by comparing opportunity costs by eliminating countries from an originally much wider set. Our estimates

for four different groups of countries have to be taken as complementary instruments for deciding about competing locations of an investment venture. We start by separating the group of 15 advanced European countries (see Table 4 in Appendix 1).

The first apparent change in behaviour of investors to advanced countries is that in models #5 and #6 the dependence of FDI on both economic and risk factors is weaker, as testified by the lower coefficient of determination and lower significance of coefficients in all regressions. The finding of negative dependence of FDI on property rights in cross-country regression #5 with random effects (but not confirmed in the GMM model) could be explained by the consideration that law enforcement in all these countries is still generally high, when compared with the rest of Europe. A high negative coefficient of investment freedom in the GMM estimation shows that investing into rich European countries was not discouraged by capital controls (present up to the early 1990s in countries such as Spain, Ireland and Portugal). The panel time-series specification and the GMM estimation for our 15 advanced countries in #7 and #8 point to a very similar outcome. Indeed, FDI decisions to enter these countries seem to reflect preferences as to two dominant economic factors: market size and trade openness. The tendency to risk neutrality is explicit (as risk differentials might be considered low and unimportant).

Table 5 with estimates for nine EU first wave accession countries offers a different picture. Even though market size proxied by population in models #9 and #10 is again a decisive economic factor, numerous institutional/risk factors emerge. Prudent regulatory, monetary and fiscal policies, in addition to government effectiveness are important attractors of FDI in these countries. Apart from market size, all significant variables deal with policies. The message from this can be formulated as a maxim: successful transition and prosperity (i.e. GDP per capita that is highly collinear with our exogenous variables) rests on attracting FDI by fine-tuning the institutional setup in a country. [7]

In the case of the panel time-series estimation in models #11 and #12, it is worth noting that heavy government interventions and spending (e.g. high government procurement), schemes for FDI promotion (related to the variable GOVERN) and perhaps even capital controls, acted (contrary to intuition) as factors which boosted FDI inflows.

Even more institutionally-driven developments in FDI were found in the estimates for eight candidate countries as shown in Table 6. The cross-section specification of the panel in

[7] We have also experimented with an alternative specification where GDP per capita was included, which required the removal of several collinear institutional variables. Such a specification pointed to the essential importance of labour costs with a positive sign.

#13 and #14 reveals the importance of trade openness and regulatory and monetary discipline. Effectiveness of governments and education, plus higher labour costs are positively associated with FDI. On the other hand, fiscal, investment and corruption burdens do not impede FDI. The panel time-series estimations in #15 and #16 concur with the previous findings: FDI growth is motivated essentially by market size, de-regulation, education and government effectiveness. Encroachments on property rights and investment activities are correlated with FDI absorption.

One important finding emerges when we compare results for the three groups of countries that are related to economic maturity: high GDP per capita and advanced institutional setup are inversely related to the number of factors relevant for explaining FDI. At the same time, FDI inflows behave in a less deterministic way in developed countries. The highest level of explained FDI variations was estimated among the less developed candidate countries. The relevance of institutional and risk factors was the most important among them.

6. CONCLUSIONS

This research is based on a comparative approach focused on FDI coming to selected groups of European countries (including accession and EU candidate countries). The novelty of our analysis consists mainly in the formulation of an FDI function adopted in this research, which blends five macroeconomic factors with a wide range of political, governance and institutional risk indicators, and the parallel estimates of behavioural patterns of investors in three subgroups of countries. The study finds that behavioural patterns in deciding to invest abroad differ among European recipients of FDI, depending on their economic and institutional maturity.

The results estimated across four different groups of countries substantiate the voluminous literature on FDI modelling available to date. As we attempted to formulate FDI as a function of combined risk indicators and traditionally accepted macroeconomic drivers, the focus was shifted into the area of investors' perceptions – particularly the perceptions of phenomena with policy connotations. Thus, the results summarised in Tables 3 through 6 elaborate on the frequently observable dichotomy between investors' actions and their perceptions. In particular, these results provide an alternative examination of the role of risk and policy factors in FDI decisions.

The distinction between the static (cross-country) and dynamic (time-dependent) views on decision making of investors is another innovative aspect of our analysis. The results

of cross-section panel estimations (where countries compete for FDI) and time-series panel estimations (where investors decide about the growth of FDI) are complementary, reflecting the multi-criterial approaches in investors' decision-making, thereby enriching the explanatory power of our analysis. In general, the regression outputs exhibit significant behavioural differences between countries grouped by their history in alignment with the EU. We find that countries under different institutions and diverse economic development differ quite consistently with regard to drivers of FDI attraction and absorption. Visible differences also appear in the statistical significances and even signs of factors across groups. Given that the heterogeneity of behaviour at national level is so pronounced, we cannot rely on the existence of some all-embracing general macroeconomic theory covering FDI allocation.

The most striking differences, in terms of determining factors and statistical significance of risk indicators, can be found in comparing the advanced Europe-15 with the remaining 17 countries. We have observed that FDI coming to highly-developed countries, with a history of long economic integration and shared institutional setup, is much less sensitive to political risk factors than FDI to destination countries that are poorer and institutionally heterogeneous. Lack of transparency in these countries calls for caution or even discrimination by investors, though it is not a foregone conclusion that better performing institutions automatically attract more investment or suppress caution in investors. In cases where the institutional setup contradicts liberal tenets, such as high taxation and government spending, investment controls or corruption were associated with higher FDI. This tendency was more apparent in economically and institutionally less advanced countries.

All our regressions illustrate the importance of market size, proxied by population size, as a crucial and omnipresent factor of FDI attraction, followed in importance by trade openness. The remaining economic and institutional factors either enhance or diminish their importance. The variable of trade openness was so robust that the parallel institutional variable of trade freedom was found to be statistically significant in only one case. Interestingly, whenever labour costs were statistically significant, their sign was positive. The bias of FDI to seek cheap labour, typical for comparative advantages in post-communist countries in the early 1990s seems to have lost its importance in the latter period.

With regard to political risk, there was a consistent positive and significant relationship between FDI inflows and price stability, absence of price controls and high inflation (i.e. the 'monetary freedom indicator'), low regulation, effective government and good education. This indicates that countries with more transparent and efficient institutions tend to experience higher levels of FDI and prosperity. There is broadly established consensus

as to the fact that institutional failures in these areas tend to disrupt market efficiency; more importantly such ill-performing policies negatively affect investors' expectations.

Contrary to intuition, we find that factors such as high government taxation and spending, capital controls or inefficient local banking do not seem to be universal impediments to FDI. Here our findings are at odds with the survey results reviewed earlier in the paper. Paradoxically, in some cases even corruption and low levels of property rights protection did not hinder FDI. Such an outcome could reasonably be attributed to the fact that investors price their investments in the country on the basis of political risk according to the level of stability in the long-run. Thus, for example, investors might be willing to "tolerate" an excessive level of corruption or taxation if it does not affect their market power in the country, allowing investors also to receive rents from their good contacts with the local political powers. Such an outcome could also be attributed to the ongoing globalization process and its spur given to capital mobility.

This study points to an important aspect of development, which is associated with *transiency of principles and factors that determine decision-making of international direct investors*, which we have attempted to measure. The transiency is related not only to *time* but also to the changing perceptions of investment opportunities in *space* (i.e. across countries in given time). This brings to the focus investors' expectations of risks and potential losses from transaction costs in alternative ventures. A large part of the perceived risk factor is related to the institutional setup in host countries that is subject to national economic policies.

The countries analyzed in this research are at varying stages of economic and institutional (under)development, which was reflected also by their groupings. Their evolving position relative to the EU core, however, allows them to switch in time from one group to another – as happened in the case of many of the accession countries in 2004. From the obtained results, we argue that institutions, social governance and political risk are undisputable factors in FDI determination, complementing the economic conditions of investment yields. Even though the former are measured via soft data, we are of the view that models omitting this aspect of FDI would not only be miss-specified and subject to higher estimation bias, but also fail to acknowledge the rich policy-dependence of FDI inflows.

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Appendix 1: Tables 3-6 with coefficients and econometric characteristics

TABLE 3: Macroeconomic, institutional and risk drivers of FDI – All-32

	#1a	#1b	#2	#3	#4
Indicators (in logs)	Cross-section specification	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification
	Fixed effects	Random effects	Dynamic GMM	Random effects	Dynamic GMM
(Intercept)	-8,409 **	-4,188 ***	-0,341	-1,72	-119,7
	[0,01]	[0,00]	[0,95]	[0,31]	[0,20]
GDP/PC		1,472 ***		0,778 **	1,306
		[0,00]		[0,03]	[0,54]
POPUL	0,949 ***	0,847 ***	1,907 ***	0,789 ***	3,614 **
	[0,00]	[0,00]	[0,00]	[0,00]	[0,04]
TRADE/GDP	0,152		2,538 **		
	[0,57]		[0,04]		
TELEC	0,636 ***		0,002	0,550 **	-0,162
	[0,00]		[0,99]	[0,02]	[0,91]
L-COST	0,573 ***		0,810 ***	0,482 ***	-0,599
	[0,00]		[0,00]	[0,00]	[0,60]
REGUL	0,667		1,886		5,223 *
	[0,17]		[0,16]		[0,08]
TRADE	-0,532		-0,641		-0,544
	[0,30]		[0,45]		[0,19]
MONET	0,195		1,009 **		0,930
	[0,31]		[0,03]		[0,53]
GOVERN	-0,218 **	-0,265 ***	0,483 ***	-0,175 *	
	[0,02]	[0,00]	[0,00]	[0,08]	
FISCAL	-0,006	0,556	-2,697 *	-0,688	2,618
	[0,98]	[0,15]	[0,06]	[0,17]	[0,64]
PROP-R					
INVEST	-0,243		-1,259 *		1,106
	[0,34]		[0,06]		[0,51]
FINANC	0,944 ***		-0,009		-9,251 **
	[0,00]		[0,98]		[0,03]
CORRUPT	0,317		0,327		-1,87
	[0,19]		[0,19]		[0,27]
EDUC	2,824 *		-1,512		
	[0,09]		[0,59]		
GVT-EFF					
R^2 within	0,61	0,55		0,21	
R^2 between	0,60	0,60		0,87	
Signif. tests	Hausman 0,00	Hausman 0,08	Sargan: 0,05 AB1: 0,01 AB2: 0,22	Hausman 0,43	Sargan: 0,24 AB1: 0,02 AB2: 0,41
No. of observ.	448	448	448	448	448
No. of groups	14 years	14 years	14 years	32 countries	32 countries

Panel data regression results for all 32 countries in period 1995-2008. P-values of statistical significance are in parentheses. ***, **, * imply the significance at the 1, 5 and 10% level, respectively. AB = Arellano-Bond tests for AR1 and AR2 in first differences.

TABLE 4: Macroeconomic, institutional and risk drivers of FDI – Advanced-15

	#5	#6	#7	#8
Indicators (in logs)	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification
	Random effects	Dynamic GMM	Random effects	Dynamic GMM
(Intercept)	0,312	16,369 **	0,164	11,73
	[0,91]	[0,02]	[0,96]	[0,56]
GDP-PC			0,046	1,286
			[0,94]	[0,65]
POPUL	1,265 ***	2,889 ***	1,302 ***	2,973 **
	[0,00]	[0,00]	[0,00]	[0,01]
TRADE/GDP	1,254 *	8,742 ***	1,45 **	8,881 ***
	[0,06]	[0,00]	[0,03]	[0,01]
TELEC				
L-COST				
REGUL	-0,747	-1,529	-0,713	-0,428
	[0,60]	[0,46]	[0,56]	[0,92]
TRADE				
MONET	-0,159			
	[0,19]			
GOVERN	-0,159	-0,46	-0,162	-0,299
	[0,19]	[0,11]	[0,28]	[0,66]
FISCAL				
PROP-R	-2,071 **	9,494 ***	-0,96	7,675
	[0,05]	[0,00]	[0,20]	[0,19]
INVEST	-0,858	-18,33 ***	-1,004	-21,46 *
	[0,25]	[0,00]	[0,33]	[0,07]
FINANC	0,593	-5,604	0,429	-6,25
	[0,34]	[0,16]	[0,50]	[0,21]
CORRUPT	1,229 *	1,185	1,225	
	[0,05]	[0,23]	[0,16]	
EDUC				
GVT-EFF	1,864 **	-2,69	1,78	1,876
	[0,03]	[0,56]	[0,21]	[0,77]
R^2 within	0,35		0,01	
R^2 between	0,03		0,91	
Signif. tests	Hausman 0,23	Sargan: 0,82 AB1: 0,02 AB2: 0,31	Hausman 0,17	Sargan: 0,14 AB1: 0,02 AB2: 0,61
No. of observ.	210	210	210	210
No. of groups	14 years	14 years	15 countries	15 countries

Panel data regression results for 15 advanced European countries in 1995-2008.
p-values of statistical significance are in parentheses.
***, **, * imply the significance at the 1, 5 and 10% level, respectively.
AB = Arellano-Bond tests for AR1 and AR2 in first differences.

TABLE 5: Macroeconomic, institutional and risk drivers of FDI - Accession-9

	#9	#10	# 11	#12
Indicators (in logs)	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification
	Fixed effects	Dynamic GMM	Fixed effects	Dynamic GMM
(Intercept)	-6,382 *** [0,00]	-19,85 *** [0,00]	-9,34 [0,19]	3,06 [0,80]
GDP-PC				
POPUL	0,936 *** [0,00]	1,622 *** [0,00]	0,896 [0,34]	0,858 *** [0,00]
TRADE/GDP	0,002 [0,99]	-0,597 [0,52]	2,681 *** [0,00]	-0,500 [0,33]
TELEC				
L-COST				
REGUL	1,638 ** [0,02]	3,281 *** [0,00]		
TRADE	-0,641 [0,41]	1,295 [0,47]	1,007 [0,21]	10,08 *** [0,00]
MONET	0,560 ** [0,04]	0,229 [0,52]	0,592 ** [0,04]	-0,523 [0,36]
GOVERN	-0,229 * [0,06]	-0,270 [0,19]	-0,491 *** [0,00]	-0,737 *** [0,00]
FISCAL	1,441 ** [0,02]	5,190 *** [0,00]	1,34 [0,11]	-0,054 [0,94]
PROP-R	1,337 *** [0,00]	0,097 [0,86]	0,729 [0,15]	0,756 [0,65]
INVEST	-0,468 [0,19]	-0,795 * [0,08]	0,415 [0,34]	-4,32 * [0,08]
FINANC			0,293 [0,50]	2,19 * [0,06]
CORRUPT			0,596 [0,12]	1,76 * [0,06]
EDUC			-0,916 [0,83]	-5,28 [0,42]
GVT-EFF	1,304 ** [0,03]	3,736 *** [0,00]		
R^2 within R^2 between	0,79 0,52		0,53 0,47	
Signif. tests	Hausman 0,00	Sargan: 0,08 AB1: 0,01 AB2: 0,31	Hausman 0,00	Sargan: 0,25 AB1: 0,03 AB2: 0,48
No. of observ.	126	126	126	126
No. of groups	14 years	14 years	9 countries	9 countries

Panel data regression results for nine accession countries in 1995-2008.
p-values of statistical significance are in parentheses.
***, **, * imply the significance at the 1, 5 and 10% level, respectively.
AB = Arellano-Bond tests for AR1 and AR2 in first differences.

TABLE 6: Macroeconomic, institutional and risk drivers of FDI – Candidates-8

	#13	#14	# 15	#16
Indicators (in logs)	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification
	Fixed effects	Dynamic GMM	Random effects	Dynamic GMM
(Intercept)	-16,72 ***	-17,47 ***	-26,44 ***	-47,8 ***
	[0,00]	[0,00]	[0,00]	[0,00]
GDP-PC				
POPUL	0,924 ***	0,984 ***	1,28 ***	2,137 ***
	[0,00]	[0,00]	[0,00]	[0,00]
TRADE/GDP	0,708 **	3,023 ***	1,346 ***	-0,124
	[0,01]	[0,00]	[0,00]	[0,96]
TELEC				
L-COST		0,536 **		
		[0,03]		
REGUL	2,065 ***	6,308 ***	3,01 ***	10,62 ***
	[0,00]	[0,00]	[0,01]	[0,01]
TRADE	0,492	0,837	0,47	-3,21
	[0,51]	[0,36]	[0,52]	[0,16]
MONET	0,077	2,222 **	0,311	0,623
	[0,78]	[0,03]	[0,33]	[052]
GOVERN	-0,218	0,376	-0,07	-0,661
	[0,12]	[0,20]	[0,69]	[0,14]
FISCAL	-0,146	-6,938 **	0,916	1,66
	[0,80]	[0,05]	[0,22]	[0,64]
PROP-R	-0,417 *	0,187	-1,002 ***	-2,24 **
	[0,07]	[0,65]	[0,00]	[0,04]
INVEST	-0,491 **	-2,322 **	-0,668 *	-2,35 **
	[0,05]	[0,01]	[0,06]	[0,02]
FINANC	-0,295	-0,318		
	[0,27]	[0,44]		
CORRUPT	-0,163	-0,803 **	-0,25	0,206
	[0,35]	[0,03]	[0,30]	[0,47]
EDUC	7,213 ***	6,209 **	9,49 ***	20,25 ***
	[0,00]	[0,02]	[0,00]	[0,01]
GVT-EFF	1,340 ***	1,169 **	1,624 ***	0,663
	[0,00]	[0,04]	[0,00]	[0,10]
R^2 within	0,84		0,77	
R^2 between	0,91		0,97	
Signif. tests	Hausman 0,00	Sargan: 0,42 AB1: 0,02 AB2: 0,27	Hausman 0,34	Sargan: 0,40 AB1: 0,04 AB2: 0,82
No. of observ.	112	112	112	112
No. of groups	14 years	14 years	8 countries	8 countries

Panel data regression results for eight EU candidate countries in 1995-2008.
p-values of statistical significance are in parentheses.
***, **, * imply the significance at the 1, 5 and 10% level, respectively.
AB = Arellano-Bond tests for AR1 and AR2 in first differences.

APPENDIX 2: Tables 3 through 6 in an integrated overview: Economic, institutional and risk drivers of FDI.
Panel data regression results for all four groups of countries in 1995-2008.

	All #1a	All #1b	All #2	All #3	All #4	Advanced #5	Advanced #6	Advanced #7	Advanced #8	Access. #9	Access. #10	Access. # 11	Access. #12	Candid. #13	Candid. #14	Candid. # 15	Candid. #16
Indicators (in logs)	Cross-section specification	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification	Cross-section specification	Cross-section specification	Time-series specification	Time-series specification
	Fixed effects	Random effects	Dynamic GMM	Random effects	Dynamic GMM	Random effects	Dynamic GMM	Random effects	Dynamic GMM	Fixed effects	Dynamic GMM	Fixed effects	Dynamic GMM	Fixed effects	Dynamic GMM	Random effects	Dynamic GMM
(Intercept)	-8,409 **	-4,188 ***	-0,341	-1,72	-119,7	0,312	16,369 **	0,164	11,73	-6,382 ***	-19,85 ***	-9,34	3,06	-16,72 ***	-17,47 ***	-26,44 ***	-47,8 ***
	[0,01]	[0,00]	[0,95]	[0,31]	[0,20]	[0,91]	[0,02]	[0,96]	[0,56]	[0,00]	[0,00]	[0,19]	[0,80]	[0,00]	[0,00]	[0,00]	[0,00]
GDP-PC	0	1,472 ***	0	0,778 **	1,306	0	0	0,046	1,286	0,002	0	0	0	0	0	0	0
	0	[0,00]	0	[0,03]	[0,54]	0	0	[0,94]	[0,65]	[0,99]	0	0	0	0	0	0	0
POPUL	0,949 ***	0,847 ***	1,907 ***	0,789 ***	3,614 **	1,265 ***	2,889 ***	1,302 ***	2,973 **	0,936 ***	1,622 ***	0,896	0,858 ***	0,924 ***	0,984 ***	1,28 ***	2,137 ***
	[0,00]	[0,00]	[0,00]	[0,00]	[0,04]	[0,00]	[0,00]	[0,00]	[0,01]	[0,00]	[0,00]	[0,34]	[0,00]	[0,00]	[0,00]	[0,00]	[0,00]
TRADE/GDP	0,152	0	2,538 **	0	0	1,254 *	8,742 ***	1,45 **	8,881 ***	0,002	-0,597	2,681 ***	-0,500	0,708 **	3,023 ***	1,346 ***	-0,124
	[0,57]	0	[0,04]	0	0	[0,06]	[0,00]	[0,03]	[0,01]	[0,99]	[0,52]	[0,00]	[0,33]	[0,01]	[0,00]	[0,00]	[0,96]
TELEC	0,636 ***	0	0,002	0,550 **	-0,162	0	0	0	0	0	0	0	0	0	0	0	0
	[0,00]	0	[0,99]	[0,02]	[0,91]	0	0	0	0	0	0	0	0	0	0	0	0
L-COST	0,573 ***	0	0,810 ***	0,482 ***	-0,599	0	0	0	0	0	0	0	0	0	0,536 **	0	0
	[0,00]	0	[0,00]	[0,00]	[0,60]	0	0	0	0	0	0	0	0	0	[0,03]	0	0
REGUL	0,667	0	1,886	0	5,223 *	-0,747	-1,529	-0,713	-0,428	1,638 **	3,281 ***	0	0	2,065 ***	6,308 ***	3,01 ***	10,62 ***
	[0,17]	0	[0,16]	0	[0,08]	[0,60]	[0,46]	[0,56]	[0,92]	[0,02]	[0,00]	0	0	[0,00]	[0,00]	[0,01]	[0,01]
TRADE	-0,532	0	-0,641	0	-0,544	0	0	0	0	-0,641	1,295	1,007	10,08 ***	0,492	0,837	0,47	-3,21
	[0,30]	0	[0,45]	0	[0,19]	0	0	0	0	[0,41]	[0,47]	[0,21]	[0,00]	[0,51]	[0,36]	[0,52]	[0,16]
MONET	0,195	0	1,009 **	0	0,930	-0,159	0	0	0	0,560 **	0,229	0,592 **	-0,523	0,077	2,222 **	0,311	0,623
	[0,31]	0	[0,03]	0	[0,53]	[0,19]	0	0	0	[0,04]	[0,52]	[0,04]	[0,36]	[0,78]	[0,03]	[0,33]	[052]
GOVERN	-0,218 **	-0,265 ***	0,483 ***	-0,175 *	0	-0,159	-0,46	-0,162	-0,299	-0,229 *	-0,270	-0,491 ***	-0,737 ***	-0,218	0,376	-0,07	-0,661
	[0,02]	[0,00]	[0,00]	[0,08]	0	[0,19]	[0,11]	[0,28]	[0,66]	[0,06]	[0,19]	[0,00]	[0,00]	[0,12]	[0,20]	[0,69]	[0,14]
FISCAL	-0,006	0,556	-2,697 *	-0,688	2,618	0	0	0	0	1,441 **	5,190 ***	1,34	-0,054	-0,146	-6,938 **	0,916	1,66
	[0,98]	[0,15]	[0,06]	[0,17]	[0,64]	0	0	0	0	[0,02]	[0,00]	[0,11]	[0,94]	[0,80]	[0,05]	[0,22]	[0,64]
PROP-R	0	0	0	0	0	-2,071 **	9,494 ***	-0,96	7,675	1,337 ***	0,097	0,729	0,756	-0,417 *	0,187	-1,002 ***	-2,24 **
	0	0	0	0	0	[0,05]	[0,00]	[0,20]	[0,19]	[0,00]	[0,86]	[0,15]	[0,65]	[0,07]	[0,65]	[0,00]	[0,04]
INVEST	-0,243	0	-1,259 *	0	1,106	-0,858	-18,33 ***	-1,004	-21,46 *	-0,468	-0,795 *	0,415	-4,32 *	-0,491 **	-2,322 **	-0,668 *	-2,35 **
	[0,34]	0	[0,06]	0	[0,51]	[0,25]	[0,00]	[0,33]	[0,07]	[0,19]	[0,08]	[0,34]	[0,08]	[0,05]	[0,01]	[0,06]	[0,02]
FINANC	0,944 ***	0	-0,009	0	-9,251 **	0,593	-5,604	0,429	-6,25	0	0	0,293	2,19 *	-0,295	-0,318	0	0
	[0,00]	0	[0,98]	0	[0,03]	[0,34]	[0,16]	[0,50]	[0,21]	0	0	[0,50]	[0,06]	[0,27]	[0,44]	0	0
CORRUPT	0,317	0	0,327	0	-1,87	1,229 *	1,185	1,225	0	0	0	0,596	1,76 *	-0,163	-0,803 **	-0,25	0,206
	[0,19]	0	[0,19]	0	[0,27]	[0,05]	[0,23]	[0,16]	0	0	0	[0,12]	[0,06]	[0,35]	[0,03]	[0,30]	[0,47]
EDUC	2,824 *	0	-1,512	0	0	0	0	0	0	0	0	-0,916	-5,28	7,213 ***	6,209 **	9,49 ***	20,25 ***
	[0,09]	0	[0,59]	0	0	0	0	0	0	0	0	[0,83]	[0,42]	[0,00]	[0,02]	[0,00]	[0,01]
GVT-EFF	0	0	0	0	0	1,864 **	-2,69	1,78	1,876	1,304 **	3,736 ***	0	0	1,340 ***	1,169 **	1,624 ***	0,663
	0	0	0	0	0	[0,03]	[0,56]	[0,21]	[0,77]	[0,03]	[0,00]	0	0	[0,00]	[0,04]	[0,00]	[0,10]
R^2 within	0,61	0,55		0,21		0,35		0,01		0,79		0,53		0,84		0,77	
R^2 between	0,60	0,60	0	0,87	0	0,03	0	0,91	0	0,52	0	0,47	0	0,91	0	0,97	0
			Sargan: 0,05		Sargan: 0,24		Sargan: 0,82		Sargan: 0,14		Sargan: 0,08		Sargan: 0,25		Sargan:0,42		Sargan:0,40
			AB1:0,01		AB1:0,02		AB1: 0,02		AB1: 0,02		AB1: 0,01		AB1: 0,03		AB1:0,02	Hausman	AB1:0,04
Signif. tests	Hausman 0,00	Hausman 0,08	AB2:0,22	Hausman 0,43	AB2:0,41	Hausman 0,23	AB2: 0,31	Hausman 0,17	AB2: 0,61	Hausman 0,00	AB2: 0,31	Hausman 0,00	AB2: 0,48	Hausman 0,00	AB2:0,27	0,34	AB2:0,82
No. of observ.	448	448	448	448	448	210	210	210	210	126	126	126	126	112	112	112	112
No. of groups	14 years	14 years	14 years	32 countries	32 countries	14 years	14 years	15 countries	15 countries	14 years	14 years	9 countries	9 countries	14 years	14 years	8 countries	8 countries

Note: The grey shading indicates significant results in the behaviour of agents, which are counter-intuitive due to their negative signs.
Panel data regression results for 15 advanced European countries in 1995-2008.
p-values of statistical significance are in parentheses.
***, **, * imply the significance at the 1, 5 and 10% level, respectively.
AB = Arellano-Bond tests for AR1 and AR2 in first differences.

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